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THE JUBILEE
OF
SANITARY SCIENCE,
BEING
THE ANNUAL ADDRESS



BY
EDWIN CHADWICK, C.B.,

AT THE
ANNIVERSARY DINNER OF THE ASSOCIATION
OF PUBLIC SANITARY INSPECTORS,
February 5, 1887.

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LONDON :
JAMES MELDRUM, 1, CATHERINE STREET, STRAND, W.C
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1887.



THE JUBILEE OF SANITARY SCIENCE.

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ON the 5th of February a dinner in celebration of Her Majesty's Jubilee was held in the Guildhall Tavern by the Association of Public Sanitary Inspectors, and was attended by members of that body throughout the country, under the presidency of Mr. Edwin Chadwick, C.B. Among the guests present were—Earl Fortescue; Major-General Sir Andrew Clarke, R.E., K.C.M.G.; Sir W. Guyer Hunter, M.P., K.C.M.G.; Sir Robert Rawlinson, C.B.; Captain Douglas Galton, C.B.; Sir Saul Samuel, K.C.M.G. (Agent-General for New South Wales); Dr. B. W. Richardson, F.R.S.; Mr. W. E. H. Lecky, the historian; Dr. Robert Giffen; Dr. F. J. Mouat; Dr. J. C. Peters (of New York); Mr. George Godwin, F.R.S.; Dr. T. O. Dudfield; Major L. Flower; Mr. Isaac Shone, C.E.; Mr. C. Hawkesley, C.E.; Mr. G. B. Jerram, A.M.I.C.E. (Chairman of Council), and others.

The President, Mr. EDWIN CHADWICK, in giving the usual loyal toasts, said: I have the honour to propose the Health of Her Majesty the Queen, and respectfully to present our congratulations that in the fifty eventful years of her reign so much has been attempted and so much achieved on the special subject of the health of nations.

It may be claimed that in these fifty years the science of sanitation has been founded, and that the Queen was herself one of the first to recognise its principles in the advancement of the health, the strength, the duration of life, and the happiness of her subjects. (Cheers.) More than a quarter of a century ago I stated that if all Her Majesty's subjects were to bestow the care that by the Queen's directions was bestowed on her own cottages, every third year would be as a jubilee, in which there would be no sickness and death. (Applause.) The model cottages presented by the Prince Consort (on which I had the honour to be consulted) to the Great Exhibition were built on sanitary principles, and were in accordance with Her Majesty's sentiments. In model dwellings since built—more or less on the same sanitary principles—the common death-rate of thirty in the thousand has been reduced one-half, and the duration of life from infancy augmented by ten years. We have, indeed, examples of a number of towns under the separate system where the death-rate has been so reduced, on which I have to offer further explanation, that every second year may be set down as a year of jubilee without sickness and without death. But, practically, we must moderate our expectations and limit them to a public reduction of not less than one-third, a reduction which may be attained not only by all Her Majesty's subjects, including her Colonial subjects, but by our brethren of the United States, and by foreign nations who are now advancing in sanitation. (Cheers.)

The President, in afterwards addressing the meeting, spoke as follows:—I beg to offer explanations of the position which we claim to have attained for sanitation in this, the year of Her Majesty's Jubilee. Sanitary science, I may state, is now so far advanced in certainty that if it were duly represented for the people by a superior competent State organisation, say by a Minister of Health, that authority might within limits direct, and the sanitary engineer might undertake, to effect larger definite reductions of death-rates; and (setting aside the consideration of human pain and misery) might do so in favour of reduc-

tion of the insurance charges for preventible sickness and mortality. The present reduced annual death-rate for the metropolis may be stated at 19 in 1,000, but I conclude that the sanitary engineer could undertake its reduction by 5 in 1,000, and at a cost greatly below the existing insurance charges for sickness, loss of work, and death. (Hear, hear.) On what experiences, it may be asked, are the statements as to that conclusion based? The answer may be, that they are based on that which has been done for the common lodging-houses—old buildings, once the seats of pestilences, but now cleared of them by very rudimentary sanitary measures; on what has been done in blocks of buildings in the metropolis, and in old urban districts, such as Salisbury, where the death-rate, as high as 40 in a thousand, has been reduced to 16 in a thousand; in Dover, where 28 in a thousand, is now about 14; in Rugby, where 24 in a thousand, is now under 12; in Croydon, where 28, is now 10 to 15; in Matlock, where 18, is now 9. These figures are subject to fluctuations above or below, but the working examples of reductions of death-rates by more than a third are sufficiently numerous to warrant the undertaking of the reduction of the death-rate of the metropolis by at least one-third, or by five in a thousand. In all such instances the reduction of the death-rates is accompanied by a greater or less extension of what I call the “life rates,” or the extended duration of life. Thus, in Leek, where the death-rate has been reduced by 9 in a thousand, the mean age of death has been extended from 24 to 33 years. Dr. Ogle, in his report from the Registrar-General’s Office, shows that the mean annual mortality of England and Wales in the five years 1881-5 was 19·3 per thousand population, or 2·1 per thousand lower than the rate in the ten years 1871-80. This implies a saving of 281,000 lives in the five years, or an annual saving of 56,200 lives. (Applause.) Now, on Dr. Farr’s estimate of the value of human life, these 56,200 lives, valued at £159 per head, give a money saving of £8,935,800, in round numbers nine million pounds sterling, or half a million more than a year’s expenditure of the poor rates of the United Kingdom. (Applause.) And this saving is

really from very partial work during the Jubilee period. The life rate can only, in the present state of the census returns, be deduced from the mean ages of deaths, and the advance of these mean ages in six of the towns stated has been during the Jubilee period from 34 years six months to 39 years eight months, which would show the possibility of the reduction of the death rate by 5 years, with an accompanying augmentation of the life rate to the same extent. (Cheers.) It will be for each individual to estimate what the money value of five years' life is worth to him, in addition to the saving of rates, and the saving of the burden of insurance charges. The factors for effecting this work would be, a constant supply of pure water carried into every house or into every flat of the house; constant removal of all fouled water by the water closet and by the kitchen sinks through self-cleansing house drains; and the immediate removal of all dead matter from the house to the land outside the town by self-cleansing sewers. The cost of these factors (where the works were properly carried out) some years ago averaged threepence-half penny per house per week, or on the average of a population of five to each house, of one halfpenny per week per head of the population. The cost of labour has been increased since that time, but the prices of the chief material, the earthenware pipes, have been reduced by one half, so that the total cost of the works is now about the same. From works properly executed there would be no such deadly smells as have pervaded the Houses of Parliament, or as now pervade the public offices, nor any such smells as now pervade the streets, and are the subject of complaint along the whole sixteen miles of trunk-sewer of stagnant sewage. At the same time the estimated cost of the sickness, the loss of work, and the excessive deaths which the reduction of the death-rate in the metropolis by five in a thousand would remove—would not be less, on Dr. Farr's estimate, than three millions and a-half per annum on the four millions one hundred and forty thousand of population of the inner ring of the metropolis.

The possible reduction of the death-rate by five in a thousand is based upon experiences in a sufficient number of instances of what has been done, but it does not include any of the provisions we made in our regulations at the first Board of Health of the duties of officers of health. These provided for the regular examination, at least weekly, of children in schools, in which, besides the visits by the health officer, would be visits by sanitary inspectors to the homes of the children, with the prevention there of overcrowding, and of bad sanitary conditions, such preventions as have banished pestilences from common lodging houses. This service of the competent sanitary inspection of schools may be especially commended to the colonial authorities, for in all of the colonies the infantile death-rate is stated to be 50 per cent. under five years—that is to say, that of the children born in all of them, one-half are in their graves by their fifth year. The colonial local authorities may be assured that by the effective application of sanitary principles in their towns this enormous evil may be effectively reduced. I may mention, as illustrative of the progress of sanitary power, that in orphan institutions, such as the District half-time schools, formerly the seats of pestilences, the supposed necessary “children’s diseases” have been reduced to an extent at which the physicians of the curative service who attend them have expressed surprise. On a recent visit to Anerley school, which has about 900 children, we were informed that they had not had a case of measles for twelve years. These institutions may be regarded as children’s hospitals, for a large proportion are taken in with developed disease upon them, and their general death-rate is 10 in 1,000, but of diseases of spontaneous origin the death-rates are not more than 3, and oftener 2 per 1,000, whilst the general death-rate of the same class and age outside is about 12 per 1,000. A very important example of the advance of the power of sanitation is presented by the Children’s Aid Society of New York, which has adopted the half-time principle, and applied it to some 11,000 of street children under its charge. Here by reducing the time of massing children together, as in the long-

time schools, and by other appliances of cleauliness and the prevention of overcrowding, the pestilential visitations have been banished, and the children's death-rates have been reduced, in that heavily death-rated city to about two in a thousand. Nor does the practical economy of reduction of the death-rate in the metropolis and elsewhere, include the reduction provided for in our rules for the duties of officers of health, by the inspection of the adults in workshops as well as of the children. (Hear, hear.) The functions of the present inspectors are confined to securing the application of the provisions for the reduction of the time of work. Our provisions were, in addition, directed to the maintenance of all sanitary conditions, and would have led, as I have stated, to the examination of dwellings by sanitary inspectors and the extension of the great economies of the police inspections in the metropolis under the Common Lodging House Act. The reduction of five in a thousand would be the work of the sanitary engineer; but these reductions by the health officer and the sanitary inspector, added to his, would make greater reductions of the death rates than any that have hitherto been conceived or stated.

On an examination of these experiences, I believe they will be found to establish for every place, in every civilised community, such advantages that we may dismiss all apprehensions as to the expenses of works—expenses which arise purely out of the wastefulness of ignorance—and look only to the economy of works, applied with science and skill, for great and advancing sanitation by correct legislation and administration. Under true skill contracts may be made for the attainment of results through pecuniary economy, in health and strength, as well as in ameliorating the pains of disease and excessive mortality. (Applause.) I have said nothing of the power now proved to be available for surface distribution, of fresh instead of putrid manures, with fivefold snperior agricultural productions, completing, instead of stagnation, the system of “circulation,” and of “the rainfall to the river, and the sewage to the land.” I prefer, in the few words left me, to say how agreeable it is to think on this auspicious occa-

sion that, within Her Majesty's Jubilee, by results of continuous labour, greater triumphs have been achieved for the enhancement of the health, the strength, the prosperity, and the happiness of nations, than in any previous known age in the history of the family of man. (General cheering.)

In the course of the proceedings Sir Robert Rawlinson avowed himself to be a pupil of the president's, whose doctrines and experience were confirmed by practice. General Sir Andrew Clarke narrated his successful application of the principles of the Sanitary President's Report (1842) in Victoria. Dr. Monat narrated the adoption of and successful application of the same principles in India; and Mr. Lecky, the historian, in the course of an eloquent speech, said that "Whatever might be said of the eighteenth century, it could not be said to be distinguished for the prevalence of sanitary knowledge. Sanitary science, as we now understood it, was a thing of later growth, although one great sanitary reformer had appeared before the eighteenth century, and his name was the Great Fire of London, which undoubtedly did good in destroying plague-spots, whatever harm it might have done in addition. The end of the eighteenth century witnessed the work of another great sanitary reformer John Howard, whose labours amidst the horrors of gaol fever were so remarkable. But it was not until the nineteenth century had dawned that it was seen how much could be done by legislation and voluntary effort to improve the health and to ameliorate the social and moral condition of the people; and when the history of the nineteenth century came to be written, among the many notable figures which the historian would have to trace, not one of the least interesting would be a certain venerable reformer, who at the time when many of them were still unborn was already in the forefront of the battle, and who, after eighty-seven years, was still able to come forward with words of encouragement and wisdom to

those who are following in his steps—the distinguished founder of modern sanitation, Mr. Edwin Chadwick.” (This graceful reference to the President was warmly applauded.)
